

**DETAILED ACTION**

**EXAMINER'S AMENDMENT**

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Joseph Crimaldi on 4/25/2008.

The application has been amended as follows:

1. Amend claim 1, line 19 (last line) as follows: replace "target." with

-- target,

wherein the processing unit comprises an artificial fuzzy neural network that uses information stored in the computer readable memory to determine a suitable wavelength for each of the first and second quantities of light for the conditions at a time when the multi-energy image is to be generated. –

2. Amend claim 7 as follows: delete everything and replace with

-- The system according to claim 6, wherein the quarter-wave retarders forming the first and second waveplates are rotated at an angular-velocity ratio of 5:1. --

3. Cancel claim 11.

4. Amend claim 13, line 19 (last line) as follows: replace "images." with

-- images,

wherein the step of generating the multi-energy image of the target comprises the steps of:

determining a difference between the at least one weighted image and the remaining image;

generating a Mueller matrix for the difference between the two images; and

displaying an image generated from the Mueller matrix for the difference between the two images. –

5. Cancel claim 18.

***Allowable Subject Matter***

Claims 1-10 and 12-17 are allowed.

The following is an examiner's statement of reasons for allowance:

6. As to claim 1, the prior art of record, taken alone or in combination, fails to disclose or render obvious a multi-energy imaging system wherein the processing unit comprises an artificial fuzzy neural network that uses information stored in the computer readable memory to determine a suitable wavelength for each of the first and second quantities of light for the conditions at a time when the multi-energy image is to be generated, in combination with the rest of the limitations of the claim.

7. As to claims 13 and 17, the prior art of record, taken alone or in combination, fails to disclose or render obvious a method for generating an image wherein the step of generating the multi-energy image of the target comprises the steps of: determining a difference between the at least one weighted image and the remaining image; generating a Mueller matrix for the difference between the two images; and displaying an image generated from the Mueller matrix for the difference between the two images, in combination with the rest of the limitations of the claim.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JARREAS C. UNDERWOOD whose telephone number is (571) 272-1536. The examiner can normally be reached on Monday-Friday 0530-1400.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley can be reached on (571) 272-2059. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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